REMARKS

Applicants gratefully acknowledge the Examiner's withdrawal of the restriction between Group IX (claims 9-10) and Group X (claims 11-12).

Claims 1-26 were under consideration in the application. Claims 1-8 and 13-26 have been canceled without prejudice as being directed to a non-elected invention. New claims 27-39 have been added. Accordingly, claims 9-12, and 27-39 will be under consideration upon entry of the instant amendment.

Support for the amendments may be found throughout the specification and claims as originally filed. No new matter has been added by way of these amendments to the specification and claims. Cancellation of and/or amendments to the claims should in no way be construed as acquiescence to any of the Examiner's rejections and were done solely to expedite prosecution and to reduce the number of issues on Appeal. Applicants reserve the option to further prosecute the same or similar claims in the instant or in another patent application(s).

Objections to the Specification and Claims

The Examiner has objected to the specification for failing to make reference to sequence identifiers when describing sequences embedded in the specification of the text (at pages 2, 31, Figure 3). Accordingly, the specification has been amended to include sequence identifiers. These sequence identifiers correspond to sequences listed in the Sequence Listing filed together with the instant application on July 25, 2003.

The Examiner has similarly objected to the claims (claims 9-12) for failing to describe sequences by making reference to sequence identifiers. Applicants traverse the Examiner's objection to the claims. As discussed above, the specification has been amended to specify that the nucleotide and amino acid sequences of human FHOS are the sequences set forth in SEQ ID NO:1 and SEQ ID NO:2, respectively (see paragraph beginning at page 2, line 30). In view of these teachings in the specification, Applicants submit that a reference to sequence identifiers should not be required in the claims.

The Examiner has further objected to the abstract for not including steps in the method of the invention. Accordingly, the abstract has been amended to include the steps in the method of the invention.

Claim Rejections

Claim Rejections Under 35 USC § 112

Claims 9-12

Claims 9-12 are rejected as being indefinite for recitation of the abbreviation "FHOS." Claims 9-12 have been amended to specify "Formin Homologue Overexpressed in Spleen" preceding the abbreviation "FHOS," thereby rendering the rejection moot.

Claim 12

Claim 12 is further rejected as being indefinite for recitation of the term "portion." The Examiner states that "[i]t is not clear which portion of the amino acid sequence of FHOS protein, whether it is N-terminal or C-terminal" and that it is "also not clear what is the position of that portion in relation to the amino acid sequence of full length FHOS protein." Applicants respectfully traverse the rejection on the grounds that claim 12 particularly points out and distinctly claims the subject matter which Applicant regards as the invention, as required by 35 U.S.C. § 112, second paragraph.

Claim 12, as currently amended, is drawn to "a method for identifying a compound suitable for use in treating diabetes or insulin resistance in a subject, said method comprising contacting a FHOS protein or ***biologically active fragment*** thereof with a test compound and determining the effect of the test compound on a biological activity of the FHOS protein or ***biologically active fragment*** thereof, wherein a stimulatory effect is indicative of the compound being suitable for use in treating diabetes or insulin resistance in said subject."

Applicants submit that based on the plain language of the claims, as currently amended, the teachings in Applicants' specification, and the common knowledge in the art at the time of filing, claim 12 is clear and definite to one of ordinary skill in the art. In particular, Applicants submit that the identification of biologically active fragments of FHOS proteins would be quite clear to the skilled artisan based on the teachings of the instant specification. The specification defines "FHOS activity" at page 4, lines 20-25, as including "any biological or physiological

activity mediated by FHOS." As an example, the specification describes the biological activity of FHOS as including those activities described in the three references: (i) Westendorf et al. (1999) Gene 232:173-182; (ii) Tominaga et al. (2000) Mol. Cell 5:13-25; and (iii) Westendorf (2001) J. Biol. Chem 276:46453-46459." The teachings of these three references are incorporated into the specification. Thus, based on the teachings in the specification, one of ordinary skill in the art could easily recognize fragments of a FHOS polypeptide that retain their biological activity.

In view of the foregoing arguments, Applicants respectfully request that the rejection of claim 12 under 35 U.S.C § 112, second paragraph be reconsidered and withdraw.

Claim Rejections Under 35 USC § 102

Claims 9-12 are rejected as lacking novelty in view of Tojo *et al.* (US 2004/0072742). The Examiner relies on Tojo *et al.* for teaching a "protein II" that "includes a human spleen derived protein containing the amino acid sequence of SEQ ID NO: 2, that is highly homologous (substitution of 9 amino acids in the total 1164 amino acids, that is 99.2% sequence identity) to FHOS protein described by Westendorf *et al.* (Gene, 232, 173-182, 1999, Genbank Accession NO AF113615)... (see Figures 6-11, 16, 0085 at page 5, SEQ ID NOs: 2 and 4, Examples 2, 9)." The Examiner further relies on Tojo *et al.* for teaching a "a method of screening for a compound that inhibits the binding of said protein and partial peptide to insulin responsive aminopeptidase (IRAP) or to glucose transporter 4 (GLUT4), wherein said compound is used as a preventive/remedy for diseases, e.g., hyperglycemia, diabetes mellitus (see abstract, paragraph 0031 at page 2, 0037 at page 3, 0197 at page 13, 0207 at page 14, 0221, 0224 at page 16, 0492 at page 33)... ." Applicants respectfully traverse this rejection.

Claims 9-11 are directed to a method for identifying a compound suitable for use in treating diabetes or insulin resistance in a subject, said method comprising contacting a cell capable of expressing FHOS mRNA/protein with a test compound and determining the effect of the test compound on the expression or biological activity of FHOS, ***wherein a stimulatory***

effect is indicative of the compound being suitable for use in treating diabetes or insulin resistance in said subject. Claim 12 is directed to a method for identifying a compound suitable for use in treating diabetes or insulin resistance in a subject, said method comprising contacting a FHOS protein or biologically active fragment thereof with a test compound and determining the effect of the test compound on a biological activity of the FHOS protein or biologically active fragment thereof, ***wherein a stimulatory effect is indicative of the compound being suitable for use in treating diabetes or insulin resistance in said subject.***

Under 35 U.S.C. § 102, for a prior art reference to anticipate a claimed invention, the prior art must teach *each and every element* of the claimed invention. *Lewmar Marine v. Barient*, 827 F.2d 744, 3 USPQ2d 1766 (Fed. Cir. 1987). Applicant respectfully submits that the Examiner has failed to establish how Tojo *et al.* teaches each and every element of the claimed invention in accordance with 35 U.S.C. §102.

The instant invention is based on the surprising discovery that FHOS expression is ***downregulated*** in the adipocytes of human subjects having diabetes and/or insulin resistance. The instant invention is thus directed to methods for identifying compounds that ***increase*** expression or activity of FHOS as a therapeutic approach to treating diabetes and/or insulin resistance. In contrast, Tojo *et al.* teach that an activity of protein II, namely binding of protein II to IRAP to retain GLUT4 vesicles in cells, results in an elevated blood sugar level (see, *e.g.*, page 13, paragraph 0197). Accordingly, Tojo *et al.* teach that protein II can be used in the prevention or treatment of diseases such as ***hypo***glycemia (low blood sugar level). Conversely, Tojo *et al.* also teach screening assays to identify compounds that ***inhibit*** the activity of protein II, *e.g.*, inhibit the binding of protein II to IRAP, and thus that may ***reduce*** blood sugar levels and be useful for the prevention or treatment of diseases involving high blood sugar levels, *e.g.*, ***hyper***glycemia and ***diabetes mellitus*** (see, *e.g.*, page 14, paragraph 0208). Tojo *et al.* do not teach or suggest a method for identifying a compound that stimulates the expression or biological activity of FHOS, as presently claimed. Indeed, Tojo *et al.* teach away from the claimed invention by teaching that protein II activity contributes to elevated blood sugar levels.

Thus, based on the teachings of Tojo *et al.*, one would not be motivated to screen for compounds that stimulate FHOS expression or activity in order to identify a compound suitable or treating diabetes or insulin resistance. In view of the foregoing, Applicants request that the rejection of claims 9-12 under § 102(b) be reconsidered and withdrawn.

SUMMARY

In view of the above amendment, applicant believes the pending application is in condition for allowance. If a telephone conversation with Applicants' Attorney would expedite the prosecution of the above-identified application, the examiner is urged to call Applicants Attorney at (617) 227-7400.

Applicant believes no fee is due with this statement. However, if a fee is due, please charge our Deposit Account No. 12-0080, under Order No. ADY-009, from which the undersigned is authorized to draw.

Dated: May 3, 2006

Respectfully submitted,

By _____

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